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AMSAT NEWS SERVICE
ANS-173

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT $ANS-173.01
ANS-173 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 173.01
 >From AMSAT HQ KENSINGTON, MD.
DATE June 22, 2014
To All RADIO AMATEURS
BID: $ANS-173.01

2014 Candidates for the AMSAT-NA Board of Directors Announced

The 2014 candidates, in alphabetical order by last names are:

Jerry Buxton, N0JY
Tom Clark, K3IO
Steve Coy, K8UD
Drew Glasbrenner, KO4MA
Frank Griffin, K4FEG
Bryan Klofas, KF6ZEO
Lou McFadin, W5DID
JoAnne Maenpaa, K9JKM

Normally there would be 3 full Board seats open this year, plus 2 alternates. However, with the passing of Tony Monteiro, AA2TX (SK), there will be an additional full Board seat open to fill the remaining year of his term. This means that the top three recipients of votes will have two-year terms, the fourth most vote recipient will serve as full member for one year, and the fifth and sixth highest vote recipients will serve as first and second alternate respectively.

Ballots will be mailed to the AMSAT-NA membership by 15 JUL 2014 and must be received at the AMSAT office by 15 SEP 2014 in order to be counted. Those sent outside North America will go by air mail. If you have not received your ballot package in a reasonable time for your QTH, please contact the AMSAT office. Returned ballots should be sent as promptly as possible, and those from outside North American preferably by air mail.

Election of board members is both an obligation as well as an opportunity by our membership to help shape the future direction of AMSAT. Please take the time to review the candidate statements that will accompany the ballot and determine who you wish to see on the Board. You have the option to vote for up to four candidates.

[ANS thanks AMSAT-NA for the above information]

Russian Dnepr rocket lofts record haul of 37 satellites

A Russian Dnepr rocket launched a record-breaking thirty-seven satellites on Friday morning local time, deploying a cluster of spacecraft for scientific research and commercial operation. The mission departed on schedule from Dombarovsky in Southern Russia at 01:11 local time (19:11 UTC on Thursday).

Dnepr Record Breaker:
With thirty-seven satellites aboard the Dnepr, Friday’s launch saw the record for most spacecraft launched by a single rocket broken for the fourth time in less than a year.

The previous record was set at 34 by January’s Antares launch with Orbital Sciences’ first CRS mission to the International Space Station.

Thirty-three of the satellites werre deployed directly by the Dnepr – as opposed to being released by other payloads or transported to the International Space Station for later deployment – which is also a new record. That record had previously been held by an American Minotaur launch which occurred last year.

Deimos-2, KazEOSat-2 and Hodoyoshi-3 and 4 were the main payloads for what was the twentieth Dnepr launch.

Z3Built by South Korea’s SATREC Initiative for Deimos Imaging of Spain, the Deimos-2 satellite follows on from the smaller Deimos-1 which launched in 2009.

Based around the SI-300 bus, Deimos-2 has a mass of around 300 kilograms (660 lb). It will be used for high-resolution Earth

imaging; it’s EOS-D imager is capable of producing pictures at resolutions as high as 0.75 metres (2.5 feet).

KazEOSat-2, which was previously known as the Medium Resolution Earth Observation Satellite, or DZZ-MH, will be operated by Kazakhstan Gharysh Sapary, the main contractor to the space programme of Kazakhstan.
Built by Surrey Satellite Technology Limited of the United Kingdom, KazEOSat-2 is based upon the SSTL-150+ satellite bus and carries a camera which can image the Earth at resolutions of up to 6.5 metres.

The 185 kilogram (408 lb) satellite will complement the larger and higher-resolution KazEOSat-1, which was launched by Europe’s Vega rocket in April.

The University of Tokyo’s Hodoyoshi-3 and 4 are prototype remote sensing satellites.

With masses of 60 and 66 kilograms (132 and 145 lb) respectively, Hodoyoshi-3 carries two cameras with resolutions of 40 and 200 metres (131 and 656 feet), while Hodoyoshi-4 is equipped with a single, more powerful, instrument providing a resolution of 6 metres (20 ft) per pixel.

The spacecraft are also equipped for further technology demonstration, and store-and-forward communications.

The other payloads on the Dnepr include AprizeSat-9 and 10, which will be used for commercial communications. The ownership of these satellites is not entirely clear; they were built by SpaceQuest, who will operate them for the early phases of their missions.

Once operational, the two twelve kilogram satellites may be transferred to exactEarth or retained for operation by SpaceQuest. They are the eleventh and twelfth satellites in a series which was originally named LatinSat.

BRITE-Toronto and BRITE-Montreal, also known as BRITE-CA 1 and 2, are the fourth and fifth members of the six-satellite Bright Star Target Explorer (BRITE) constellation, a joint venture between Canada’s Universities of Toronto and Montreal, Austria’s University of Vienna and the Polish Academy of Sciences.

The two satellites launched on Friday form the Canadian part of the constellation, although the University of Toronto were responsible for designing all six satellites and manufacturing most of them. The final BRITE satellite, Poland’s Heweliusz, is scheduled to be launched atop a Chang Zheng 4B rocket from China later this year.

The BRITE programme is aimed at studying variations in the amount of light coming from the brightest stars visible from Earth. The Canadian satellites are identical apart from the filters used in their telescopes; Toronto’s satellite will use a red filter to study the lower-energy end of the spectrum, while Montreal’s will study light with shorter wavelengths using a blue filter.

BugSat-1, which will be operated by Argentina’s Satellogic S.A, is a 22 kilogram technology demonstrator. Intended to demonstrate a medium-resolution camera in addition to UHF and C-band communications systems, the satellite will be made available for amateur radio users at the end of its primary mission.

Saudi Arabia’s SaudiSat-4 spacecraft will be used to study whether a

phenomenon called the photoelectric effect, which causes metals to emit electrons when exposed to ultraviolet radiation, can be use to cancel out electrical charges which build up in satellite components over time.

The 100-kilogram (220 lb) satellite was built by the King Abdulaziz City for Science and Technology (KACST) in association with NASA's Ames Research Center.

TabletSat-Aurora was developed by Russian company Sputnix. A 25 kilogram (55 lb) spacecraft, the satellite will be used to test the TabletSat-2U-EO bus upon which it is based. In addition, the spacecraft will observe the Earth, returning images with a resolution of up to 15 metres (49 feet).

The UniSat-6 satellite, of Rome's La Sapienza University, is a technology demonstration mission which follows on from last year's UniSat-5 mission. Like UniSat-5, UniSat-6 carries CubeSat dispensers however it lacks the PocketQube deployers flown on the previous mission.

Four CubeSats are expected to be deployed from UniSat-6 at a later date. AeroCube-6 is an American technology demonstration satellite which will be operated by The Aerospace Corporation. Intended to test a new CubeSat bus, it is a single-unit satellite with sides of 10 centimetres (3.9 in), which will collect data on radiation levels in low Earth orbit.

It is joined by Lemur-1, a prototype Earth-imaging satellite for NanoSatisfi Incorporated, also of the United States. The three-unit CubeSat carries visible-light and infrared imagers, however its primary objective is to demonstrate how the satellite bus functions under operational conditions.

A three-unit CubeSat, TigriSat, is the first satellite to be launched for Iraq. Built for the country's Ministry of Science and Technology by Iraqi students working at the La Sapienza University in Rome, TigriSat will be used to monitor dust storms in Iraq.

Iraq previously claimed to have launched a satellite in 1989, however this was discredited after footage of the rocket exploding during first stage flight surfaced. Analysts have also determined that it was unlikely to have been an orbital launch attempt in any case.

Antelsat, the fourth satellite to be deployed from UniSat-6, will be Uruguay's first spacecraft. It is a two-unit CubeSat, which will be used for amateur radio, Earth observation and to advance Uruguayan satellite technology.

In addition to the CubeSats aboard UniSat-6, twenty-one more will be deployed from the Dnepr itself.

DTUSat-2 is a Danish satellite being launched for the Danmarks Tekniske Universitet. It will be used to aid studies of bird migration by relaying data from GPS trackers attached to the birds. Duchifat-1 is a single-unit CubeSat which will be operated by Israel's Herzliya Science Centre.

The spacecraft has served as an educational project and once in orbit will be used to test location determination, with the satellite returning data on its calculated position to be plotted onto maps on the ground.

Eleven Flock-1c spacecraft will be launched for Planet Labs' Flock constellation. Earth imaging spacecraft, each three-unit CubeSat is equipped with cameras capable of producing photographs at resolutions of up to three metres.

Following four technology demonstration missions using Dove satellites, the first twenty-eight Flock-1 spacecraft were carried into orbit by January's Cygnus mission, for subsequent deployment from the ISS. Twenty-eight more satellites will be launched aboard the next Cygnus mission, currently scheduled for July.

NanoSatC-Br 1, a single-unit Brazilian spacecraft, is based on a kit purchased from ISIS. The spacecraft carries a magnetometer to study the South Atlantic Anomaly, an area where the Van Allen belts are unusually close to the Earth's surface exposing satellites to greater radiation levels than would otherwise be expected at those altitudes.

The Platform for Attitude Control Experiments (PACE) CubeSat will be used by Taiwan's National Cheng Kung University to test an attitude control system, returning data on how the satellite's orientation changes as it attempts to manoeuvre. By studying its performance, the satellite's operators hope to be able to develop better attitude control systems for small satellites.

Perseus-M 1 and 2 are the first six-unit CubeSats to launch, with dimensions of 30 by 20 by 10 centimetres (12 by 8 by 4 in). The satellites will be operated by Russia's Dauria Aerospace, having been constructed by Dauria's American subsidiary Canopus Systems. Each spacecraft carries an AIS receiver intended to collect data on the position and status of ships at sea.

Ukraine's PolyITAN-1 will be operated by the country's National Technical University. Itis intended to demonstrate that Ukraine can conduct a CubeSat mission and study the performance of the satellite's single-unit bus in orbit.

POPSAT-HIP-1 will test attitude control and imaging systems for Singapore's Microspace Limited. It is a three-unit CubeSat.

The last two CubeSats, QB50P1 and QB50P2, form part of the QB50 programme which aims to launch and operate a constellation of fifty small satellites for scientific research. These two demonstration satellites will be operated by Belgium's von Karman Institute with contributions from other institutions.

QB50P1 carries an Ion and Neutral Mass Spectrometer, an attitude control experiment, a thermocouple to monitor the spacecraft's temperature and FUNCube-3, an amateur radio payload for the Dutch branch of AMSAT. QB50P2 carries the same attitude control system and thermocouple, combining them with a French amateur radio system and the FIPEX experiment for the Technical University of Dresden, which will study the oxygen flux in the satellite's environment.

Converted from the R-36 missile, the Dnepr is a three-stage rocket which incorporates the two stages of the R-36MUTTH, with the missile's post-boost module converted to act as a third stage and satellite dispenser.

The R-36 originally served as an intercontinental ballistic missile capable of delivering an 18 megaton nuclear warhead, although later versions were equipped to carry up to ten Multiple Independently-Targetable Reentry Vehicles (MIRVs), each armed with a nuclear device.

Another variant, the R-36O, was designed to place its warhead into orbit, and then deorbit it onto a target anywhere in the world.

This was subsequently banned under an international treaty in 1979.

The Dnepr made its first launch in April 1999, when it deployed Britain's UoSAT-12. Among the other payloads it has launched on previous missions are the two Genesis demonstrators for Bigelow Aerospace.

Launched in 2006 and 2007, these prototype inflatable space station modules paved the way for the work Bigelow is now doing on inflatable space habitats and an experimental module for the International Space Station.

Friday's launch marked the Dnepr's twentieth flight, with only one of its previous missions ending in failure. That came in July 2006, when a first stage hydraulic failure brought down a cluster launch which had been carrying eighteen satellites.

The Dnepr launched from a silo at Site 370/13 of Russia's Dombarovsky launch site. The first stage did not ignite until the missile is clear of the silo, with ejection being accomplished by means of a gas generator at the aft of the vehicle which separated shortly after ejection is complete.

The first stage was powered by four RD-263 engines, while an RD-0255 powers the second stage and an RD-869 powered the third. The payloads were enclosed within a Gas Dynamic Shield, which protected them from the exhaust of the third stage, in addition to a regular payload fairing.

This shielding is necessary because, due to its missile heritage, the third stage flies backwards with the payloads mounted on the same side as its engine nozzles.

Spacecraft separation occurred while the stage was still firing, with the satellites ejecting from the back of the rocket. Once separation was complete, the stage continued to burn to remove itself from the operational orbit.

The Dnepr launch was the thirty-fourth orbital launch of 2014, and the first to make use of a Dnepr. The Dnepr's next launch is scheduled for no earlier than August, with five satellites including Japan's Hodoyoshi-1 and Asnaro-1.

Russia's next launch, in early July, will see a Proton-M orbit a Luch communications satellite. This will be a return-to-flight mission for the Proton, which suffered its ninth failure in ten years in May.

[ANS thanks AMSAT-NA, AMSAT-UK, & the NASA Spaceflight.com for the above information]

Amateur Radio Role on Space Station Featured at ISS Research and Development Conference

Amateur Radio on the International Space Station (ARISS) will have a prominent place at the third annual ISS Research and Development Conference this week. The conference, organized by American Astronautical Society (AAS) in cooperation with the Center for the Advancement of Science in Space and NASA, takes place June 17-19 in Chicago.

ARISS International Chairman and AMSAT Vice President for Human Spaceflight Frank Bauer, KA3HDO, will be the lead presenter for a program compiled by members of the ARISS US team – which includes ARISS International Secretary and ARRL Delegate Rosalie White, K1STO, ARRL Education Services Manager Debra Johnson, K1DMJ, and E. Mike McCardel, KC8YLD, of AMSAT. “ARISS – Inspiring and Educating Youth through Direct Connections with the ISS Crew” focuses on ARISS and its role in education.

ARISS is the first and longest continuously running educational outreach program involving the International Space Station. The first ARISS school contact took place in late 2000, and nearly 900 such Amateur Radio contacts have taken place since then. ARISS functions with participation from the ARRL, NASA, the European Space Agency (ESA), the Russian Space Agency (ROSCOSMOS), CNES, JAXA, CSA and AMSAT. It allows students, as part of a science and technology curriculum, to speak with a member of the ISS crew and ask questions about life in space or other space-related topics.

ARISS conducts about 100 such school contacts per year, each about 10 minutes long – the time of a typical ISS pass – with students in the US and around the world. Preparation for the ARISS experience motivates both students and teachers to further their educations. Educators involved in an ARISS event can learn about electronics and wireless technology through the hands-on training provided in an ARRL Teachers Institute on Wireless Technology session – several are held each year. In similar fashion, youngsters preparing for a contact with an ISS crew member may learn about radio waves, space technology, science experiments onboard the ISS, geography, and the space environment. Some 15,000 students are touched directly by an ARISS contact each year, and many more become aware the program and its benefits either directly or via news media coverage resulting from an event.

The ARISS presentation at this week’s AAS conference will provide some historical background on the ARISS program, describe the international volunteer team responsible for making program a success, and provide an overview of the process for schools to apply for an ARISS school contact. It will also explain how the ARISS team, partnered with NASA Education Office’s Teaching from Space program to engage schools and students. And it will describe some of the educational outcomes from ARISS, including data and feedback from schools, students, and organizations.

In addition to inspiring an interest in science, technology, engineering, and math (STEM) curricula and careers, ARISS offers an opportunity for Amateur Radio experimentation and for evaluating new technologies. Today the ISS is only very rarely without an Amateur Radio licensee onboard, and the complement of Amateur Radio equipment on the ISS has expanded considerably since the early days of the ARISS program. While the initial hand-held VHF and UHF transceivers remain in use, mobile-type transceivers have been installed since, the ISS has slow-scan TV and digital capabilities, and, more recently, the ARISS program completed the commissioning of digital Amateur Radio television equipment to transmit video from space in conjunction with ARISS school contacts. That effort remain under development.

The emphasis of the overall AAS conference is on ISS research and development – Discoveries in Microgravity Science; Discoveries in Space Science, Earth Science, Engineering and Education; Applications Benefitting Earth; Applications Enabling Technology and Exploration; and Opportunities.

[ANS thanks AMSAT-BB, ARISS, & the ARRL for the above information]

Successful launch of amateur radio satellite payloads

On Thursday, June 19, 2014 at 19:11:11 UT a Dnepr rocket was launched from Dombarovsky near Yasny in the Russian Federation carrying 37 satellites, 12 of which had amateur radio payloads.

Among the amateur radio payloads are a SSB/CW linear transponder, FM voice transponder, D-STAR Parrot Repeater and three Packet Radio Digipeaters.

In total 33 satellites were deployed, the remaining four, Tigrisat, Lemur 1, ANTELSat and AeroCube 6, are being carried by the microsatellite UniSat-6 and should be deployed on Friday, June 20.

In the hours immediately after launch signals were reported from POPSAT, QB50p1, QB50p2, UniSat-6, BugSat-1, NanosatC-BR1, Duchifat-1 and TabletSat-Aurora.

The two QB50 precursor Cubesats on the launch carry amateur radio transponders. They were deployed at 19:32 UT and CW signals from both were received shortly after by Andre Van Deventer ZS2BK in Port Elizabeth, South Africa. Brian Best ZS5SB also reported receiving QB50p1.

Richard Dailey N8UX in Kentucky, USA made use of the Southampton University Wireless Society (SUWS) WebSDR to receive the QB50P2 beacon when the satellite was in range of the UK.

The details of the initial 145 MHz CW transmission format for both QB50p1, and its near twin QB50p2, is at http://www.isispace.nl/HAM/qb50p.html

QB50p1 carries the FUNcube-3 400 mW inverting linear 435/145 MHz transponder provided by AMSAT-NL.
• 145.815 MHz BPSK telemetry
• FUNcube inverting 400 mW SSB/CW transponder
- 435.035-435.065 MHz Uplink LSB
- 145.935-145.965 MHz Downlink USB

QB50p2 carries a 435/145 MHz FM transponder and FX25 data transmitter from AMSAT-F.
• 145.880 MHz BPSK telemetry
• 145.840 MHz 9600 bps FSK FX25

It is expected that both these transponder payloads will be activated after the science missions have been completed.

QB50 precursor amateur radio operator page
http://www.isispace.nl/HAM/qb50p.html

There were 37 satellites and a 2U Mass Dummy on the launch,
frequencies at
http://r4uab.ru/?p=6393

For a short description of each of the satellites see
http://www.zarya.info/Calendar.php#Dnepr

Article about the launch and payloads
http://www.spaceflight101.com/dnepr-launch-updates–2014-cluster-
launch.html

Southampton University Wireless Society WebSDR
http://websdr.suws.org.uk/

[ANS thanks the AMSAT-UK for the above information]

Dnepr Launch for D-STAR Satellite

The D-STAR satellite TabletSat-Aurora launched with 11
other satellites carrying amateur radio payloads from Dombarovsky
near Yasny on Thursday, June 19, 2014 at 19:11:11 UT.

It carries a D-STAR Parrot (Store and Forward) Repeater running 0.8
watts of GMSK on 437.050 MHz (+/- 10 kHz) to a whip antenna. It can
store up to 8 seconds of voice message.

There are two other transceivers on the satellite that operate on
435.550 MHz and 436.100 MHz. Their power can be varied by command
from the ground station between 0.8 and 2.0 watts and it is
understood they will be used for command and control and transmit
GMSK telemetry data. There is also a downlink on 8192 MHz.

Dmitry Pashkov R4UAB reports the D-STAR repeater could become
operational in early July. It is understood that when the D-STAR
repeater is active the telemetry transmitters will be inactive.

Description of TabletSat-Aurora in Google English
http://tinyurl.com/TabletSat-Aurora-Description

A description of the satellites amateur radio capability is at
https://www.facebook.com/SPUTNIX.ltd/photos/a.336584396454237.77484.2
93701294075881/569763353136339/

Facebook https://www.facebook.com/SPUTNIX.ltd/

There are 37 satellites and a 2U Mass Dummy on the launch and it is
thought a dozen of them are carrying amateur radio payloads. A list
of frequencies is at http://r4uab.ru/?p=6393

For a short description of each of the satellites see
http://www.zarya.info/Calendar.php#Dnepr

Article about the launch and payloads
http://www.spaceflight101.com/dnepr-launch-updates–2014-cluster-
launch.html

[ANS thanks AMSAT-UK for the above information]

FUNcube-3 payload launch information

The FUNcube team anticipate that the Dnepr launch of the amateur radio FUNcube-3 payload on the QB50p1 CubeSat will take place as previously stated.

This Thursday is the day!

To be precise, lift off is expected to take place from Yasny on June 19, 2014 at 19:11:11 UT and the deployment of the various payloads will take place over the Indian Ocean in a similar fashion to the launch of FUNcube-1 last November.

Pre-launch Keplerian elements / Two-Line Elements (TLEs) can be seen below. The details of the initial 145 MHz CW transmission format for both QB50p1, and its near twin QB50p2, is at http://www.isispace.nl/HAM/qb50p.html

QB50p1 carries an inverting linear UV transponder with 400 mW output provided by AMSAT-NL and which is similar to that on FUNcube-1.
• 145.815 MHz BPSK telemetry
• FUNcube inverting 400 mW SSB/CW transponder
- 435.035-435.065 MHz Uplink LSB
- 145.935-145.965 MHz Downlink USB

QB50p2 carries an UV FM transponder and FX25 data transmitter from AMSAT-F. It is expected that these payloads will be activated after the science missions have been completed.
• 145.880 MHz BPSK telemetry
• 145.840 MHz 9600 bps FSK FX25

AMSAT-UK will be monitoring the launch event and watching for signal reports on the #cubesat IRC channel throughout the evening. A web client is available at http://webchat.freenode.net/?channels=#cubesat

QB50 precursor amateur radio operator page
http://www.isispace.nl/HAM/qb50p.html

There are 37 satellites and a 2U Mass Dummy on the launch, frequencies at
http://r4uab.ru/?p=6393

For a short description of each of the satellites see
http://www.zarya.info/Calendar.php#Dnepr

Article about the launch and payloads
http://www.spaceflight101.com/dnepr-launch-updates–2014-cluster-launch.html

Preliminary orbital information:

Launch Time: 19:11:11 UT
Separation of Platform A: 19:27:07 UT
Separation of QB50p1: 19:32:07 UT
Separation of QB50p2: 19:32:27 UT
1st pass over Delft/VKI: 20:46:46 UT

QB50p_PRELAUNCHKEPS
1 00362U 00362A 14170.81049769 .00000000 00000-0 10000-4 0 7

2 00362 97.9897 66.2289 0012982 291.8733 244.3145 14.85013404 03

FUNcube website http://www.funcube.org.uk/

FUNcube Yahoo Group http://amsat-uk.org/funcube/yahoo-group/

FUNcube Forum http://forum.funcube.org.uk/

[ANS thanks AMSAT-UK for the above information]

Upcoming AMSAT Events

Information about AMSAT activities at other important events around the country. Examples of these events are radio club meetings where AMSAT Area Coordinators give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence (a table with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations).

Thursday through Sunday, 17-20 July 2014 – ARRL Centennial Convention in Hartford CT. AMSAT will host a day-long Satellite Workshop on Thursday, and have a booth at the convention along with an AMSAT Forum and demonstrations throughout the convention.

Friday through Sunday, 12-14 September 2014 – ARRL Southwestern Division Convention 2014 in San Diego CA (north of the city center, near Montgomery Field airport & I-805/CA-163 interchange) – AMSAT will have a booth at this convention, there will be on-air demonstrations using satellites throughout the convention, and a presentation on amateur satellites and AMSAT

[ANS thanks AMSAT-NA for the above information]

ARISS News

Upcoming Contacts
as of 2014-06-16

Focus Camps in Sterrenlab, Italy and European Space Center, Transinne, Belgium are scheduled for a joint telebridge contact via IK1SLD on Fri 2014-06-20 18:36:47 UTC 46 deg. (more information below)

The questions will be asked alternately by participants of the Focus Camp in Italy and by participants of the Mission X Closing Event at the Euro Space Center in Belgium.

Focus Camp, Candriai, Italy

The radio contact with the ISS will take place during the Focus Campus, a science summer camp addressed to children aged 8 to 13

organized by Focus Junior - the most popular science magazine for children in Italy - and Sterrenlab, the camp organizer. During the week children will participate to science laboratories, learn about science topics and challenge themselves to design and build experiments and machines. The Focus Campus in Candriai (Trento) focuses on tinkering and DIY activities ("Una scienza da creare" - "A science to create"). Children will also have the opportunity to do sport in the morning, play with their friends and visit the alpine nature surrounding the camp premises.

Euro Space Center, Redu, Belgium

About 150 youngsters from all over Europe celebrate the International Closing Event for Mission X 2014 at the Euro Space Center in Belgium. “Mission X train like an astronaut” is an international education project that encourages children to take part in a challenge, adopting a life style reflecting astronaut training. The Closing Event offers participants the opportunity to meet astronauts and trainers, to experience the training simulators for astronauts, to simulate a Shuttle mission and to build a rocket.

The telebridge contact with Euro Space Center was a success.
- 14 questions answered by Alex Gerst
- audience 70
- signals 5.9 in the middle of the pass
The landline with Candriai Focus Camp was still down.

Students at Ufa University, Ufa, Russia are planning a direct contact for Sat 2014-06-21 14:45 UTC. No additional information has been provided.

A direct contact with students at Gymnasium Markt Indersdorf, Markt Indersdorf, Bavaria, Germany, via DN4OD is planned for Thu 2014-06-26 12:08:49 UTC 66 deg. The contact is expected to be conducted in German.

The grammar school/high school of Markt Indersdorf (Gymnasium Markt Indersdorf GMI, Germany) began operations in the school year of 2001/2002. In 2007 the first students graduated successfully with the certificate qualifying them to go to university (Abitur). Currently, about 90 teachers instruct approximately 1,100 pupils aged 10 to 19, about 250 of them are in the qualification phase (years/grades 11 and 12).

The GMI offers the choice between two faculties, the linguistic and scientific-technological one. Approximately 75 percent of the pupils decide for the latter. The pupils obtain an education in science from the 5th year/grade on, the subject Physics is taught from year/grade 8 on for both faculties, in the scientific-technological profile additional hours for more in-depth education are mandatory. In years/grades 11 and 12, the pupils have the choice between Physics, Chemistry and Biology. Experience has shown that about 30 to 40 per school year decide to take Physics. About half of them vote for Astrophysics in the 12th year/grade. From 5th year/grade on, all pupils study English as their first foreign language.

The ISS Project

The pupils are divided for this project into different groups that are each responsible for one of the following activities:

• Technology: Installation, commissioning and maintenance of the antenna system respectively the radio station as well as all the

necessary hardware and software

• Planning and monitoring: Organization of the overall sequence of events, initiation of a school's competition to select the questions to the astronauts, organization of rehearsals

• Presentation and documentation: Design of the facilities in question, elaboration of exhibitions and wall papers, construction of a model of the ISS, photo, audio and video documentation

• Public Relations (local and trans-regional): Press, TV, radio and website.

Pupils of all ages should participate in selecting the questions to the astronauts. The examination of questionnaires of other schools which already made contact with the ISS should secure the creation of uncommon and interesting questions that are not asked in every interview.

At the event in question - depending on the date and time - a large number, if possible, of the school family should be present in the assembly hall, for example, to attend a live broadcast from the radio room.

Successful Contacts

A direct contact with Slavic Nations Ham Radio Conference, Sochi, Russia was successful Thu 2014-06-12 15:40 UTC.

[ANS thanks ARISS for the above information]

Satellite Shorts from All Over

Subject: [amsat-bb] NanosatC-BR1

Hi

The first Brazilian cubesat are working well.
Video;
http://youtu.be/FZdiZMX9rcI

Preliminary TLE:

NANOSATC-BR1
1 00362U 00362A 14170.81049769 .00000000 00000-0 10000-4 0 7
2 00362 97.9897 66.2289 0012982 291.8733 244.3145 14.85013404 03

Doppler for SatPC32:

NANOSATC-BR1,145868.0,,USB,,,,TLM

Thank you

PY5LF
Luciano Fabricio
Curitiba-PR-BR GG54jm
http://www.qrz.com/db/PY5LF

[ANS thanks Luciano, PY5LF & the AMSAT-BB for the above information]

/EX

In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Joe Spier, K6WAO